

Patent Claims:

1     1.    Component with a substrate region as an oxidation  
2        protective layer, especially component of a gas turbine,  
3        with a substrate surface (13) and a substrate composition  
4        of the component (10), and with a substrate region formed  
5        in the region of the substrate surface (13) of the  
6        component through in-diffusion of at least one metal,  
7        characterized in that the component (10) comprises a  
8        substrate composition on a nickel basis with an aluminum  
9        proportion of greater than 4.5 weight %, and that  
10       exclusively at least one metal of the platinum group is  
11       diffused into the substrate surface (13) of the component  
12       (10) for the formation of the substrate region.

1     2.    Component according to claim 1, characterized in that  
2        platinum and/or palladium is diffused into the substrate  
3        surface (13) of the component (10) for the formation of the  
4        substrate region.

1     3.    Component according to claim 1 or 2, characterized in that  
2        exclusively platinum is diffused into the substrate surface  
3        (13) of the component (10) for the formation of the  
4        substrate region.

1     4.    Component according to one or more of the claims 1 to 3,  
2        characterized in that the integrated proportion of platinum

(Pt) in the substrate region amounts to between 5 and 40 weight %.

5. Component according to one or more of the claims 1 to 4, characterized in that the integrated proportion of platinum (Pt) in the substrate region amounts to between 5 and 30 weight %.

6. Component according to one or more of the claims 1 to 5, characterized in that the integrated proportion of platinum in the substrate region amounts to between 5 and 17.99 weight %.

7. Component according to one or more of the claims 1 to 6, characterized in that the proportion of aluminum in the substrate region is determined by the substrate composition.

8. Component according to one or more of the claims 1 to 6, characterized in that the component (10) comprises a substrate composition on a nickel basis with an aluminum proportion of maximally 10 weight %.

9. Component according to one or more of the preceding claims, characterized in that the component (10) is embodied as a gas turbine component, especially as a component of an aircraft engine.

1 10. Component according to claim 9, characterized in that the  
2 component (10) is embodied as a blade of a gas turbine,  
3 especially of an aircraft engine.

1 11. Oxidation protective coating for a component, especially a  
2 gas turbine component, whereby the component (10) comprises  
3 a substrate composition, and whereby the coating is formed  
4 through diffusion of at least one metal into a substrate  
5 surface (13) of the component (10) and hereby forms a  
6 substrate region of the component, characterized in that  
7 the component (10) comprises a substrate composition on a  
8 nickel basis with an aluminum proportion of greater than  
9 4.5 weight %, and that exclusively at least one metal of  
10 the platinum group is diffused into the substrate surface  
11 (13) of the component (10) for the formation of the  
12 substrate region.

1 12. Coating according to claim 11, characterized in that  
2 platinum and/or palladium is diffused into the substrate  
3 surface (13) of the component (10) for the formation of the  
4 substrate region.

1 13. Coating according to claim 11 or 12, characterized in that  
2 exclusively platinum is diffused into the substrate surface  
3 (13) of the component (10) for the formation of the  
4 substrate region.

- 1 14. Coating according to one or more of the claims 11 to 13,  
2 characterized in that the integrated proportion of platinum  
3 in the substrate region amounts to between 5 and 40  
4 weight %.
- 1 15. Coating according to one or more of the claims 11 to 14,  
2 characterized in that the integrated proportion of platinum  
3 in the substrate region amounts to between 5 and 30  
4 weight %.
- 1 16. Coating according to one or more of the claims 11 to 15,  
2 characterized in that the integrated proportion of platinum  
3 in the substrate region amounts to between 5 and 17.99  
4 weight %.
- 1 17. Coating according to one or more of the claims 11 to 16,  
2 characterized in that the proportion of aluminum in the  
3 substrate region is determined by the substrate  
4 composition.
- 1 18. Coating according to one or more of the claims 11 to 16,  
2 characterized in that the component (10) comprises a  
3 substrate composition on a nickel basis with an aluminum  
4 proportion of maximally 10 weight %.
- 1 19. Method for the production of a component with a substrate  
2 region as an oxidation protective layer, with the following  
3 steps:

- 4 a) providing a component (10) with a substrate surface  
5 (13) and a substrate composition, whereby the  
6 component (10) comprises a substrate composition on a  
7 nickel basis with an aluminum proportion of greater  
8 than 4.5 weight %,  
9 b) diffusing exclusively at least one metal of the  
10 platinum group into the substrate surface (13) of the  
11 component (10).

1 20. Method according to claim 19, characterized in that  
2 platinum and/or palladium is diffused into the substrate  
3 surface (13) of the component (10) for the formation of the  
4 substrate region.

1 21. Method according to claim 19 or 20, characterized in that  
2 exclusively platinum is diffused into the substrate surface  
3 (13) of the component (10) for the formation of the  
4 substrate region.

1 22. Method according to one or more of the claims 19 to 21,  
2 characterized in that the in-diffusion is carried out in  
3 such a manner that the integrated proportion of platinum in  
4 the substrate region amounts to between 5 and 40 weight %,  
5 preferably between 5 and 30 weight %.

1 23. Method according to one or more of the claims 19 to 22,  
2 characterized in that a gas turbine component, especially  
3 a blade of an aircraft engine, is provided as a component.

1 24. Method according to one or more of the claims 19 to 23,  
2 characterized in that the component (10) comprises a  
3 substrate composition on a nickel basis with an aluminum  
4 proportion of maximally 10 weight %.